



Contents lists available at NCBI

The American Journal of Science and Medical Research

Journal homepage: <http://ajsmrjournal.com/>



Research Article

Ethnomedicinal Knowledge of Bishnupriya Manipuri Community of Unakoti District of Tripura, North East India



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Keywords: Ethno-medicine; Khulleigulli; Bishnupriya Manipuri, COVID 19, Tripura

<https://dx.doi.org/10.5281/zenodo.8045129>

Received: 23 April 2023;

Accepted: 28 May, 2023;

Published: 3 June, 2023

ABSTRACT

The present study deals with indigenous ethno-medicinal knowledge of Bishnupriya Manipuri community of Unakoti district of Tripura, Northeast India. The ethno-medicinal exploration reveals the usage of different plant and herb species in a particular concoction that has not been documented till date. The study comprises of 15 plants and herb species mixed in a preparation locally known as 'Khulleigulli' that is used as an excellent primary treatment for sore throat, cough, cold, fever and also has been claimed to miraculously reduce the severity of upper respiratory symptoms of COVID 19. The concoction could possibly a better alternative with no known side effects as modern day allopathic medicines. There is a need of further critical phytochemical analysis of the formulation.

1. Introduction

Northeast India comes under the lower Himalayan range and is known for its extraordinary biodiversity. The region including Tripura is home to huge number of bioresources and is ranked 8th out of the 234 Bio-diversity hotspots in the world. [1, 2] Out of 450 tribes found in the country, about 225 of them hail from the region of Northeast India.[3] This magnificent region has the richest reservoir of plant diversity and it supports around 50% of India's biodiversity.[4] Tripura is a small state located at the Indo-Bangladesh border and it also shares the boundary with Mizoram and Assam. Tripura is home to many communities such as Bengalis, Reang, Chakma, Tripuri, Bishnupriya Manipuri and many others. Bishnupriya Manipuri, an original community of Manipur had to relocate themselves after they lost control over Manipur to the rival clan of Meiteis. [5] In Tripura, the community resides in parts of Unakoti district, North Tripura and parts of West Tripura. Unakoti is a beautiful district in the northern part of Tripura and the district is named after a magnificent archeological site called Unakoti nestled in the hills of Tripura with coordinates as 24.1781° N, 92.0273° E. It is believed to have one less than a crore marvellous rock carvings of Lord Shiva, his followers, Lord Ganesha, MaaDurga and many other Gods and Goddesses. The site has rich plant diversity.

Over the time, the community has gathered knowledge of utilizing the vast flora diversity found in the region and uses different ethno-botanical plants as medicines based on their belief and practices in curing diseases and ailments. The community still prefers traditional medicines before reaching out to the modern pharmaceutical ones. The people of the community prefer the herbal concoction as they are non-toxic and works miraculously in relieving common cold-like symptoms including fever, sore throat etc. The objective of the study is to survey and understand the use of herbal concoction called as 'Khulleigulli' by the Bishnupriya community since no record is available with regard to it so far. The use of this concoction is however declining because of the modernization and due to the decease of the knowledgeable person. This miraculous concoction is alien to the outside world and has not been under study. Also, the plants used in this concoction have not been studied empirically in detail for the active chemical compounds in it. A detail study on the 'khulleigulli' would be helpful as an alternative to several allopathic medicines. Immediate documentation of such valuable knowledge is important as we are gradually missing precious ethno-medicinal knowledge with increasing impact of modern western pharmaceutical medicines.

Table 1: List of plants and herbs used for preparation of Khuleigulli

Sl No	Scientific name	Family	Local name
1	<i>Myristica fragrans</i>	Myristicaceae	Jaiphal
2	<i>Nyctanthes arbor-tristis</i>	Oleaceae	Singarei
3	<i>Polygonum odoratum</i>	Polygonaceae	Phakpoi
4			Sirisokusum
5	<i>Adhatoda vasica</i>	Acanthaceae	Basokpata
6	<i>Solanum indicum</i>	solanaceae	Bekurimara
7	<i>Ocimum tenuiflorum</i>	Lamiaceae	Kala tulsi
8	<i>Ocimum sanctum</i>	Lamiaceae	Dolatulsi
9	<i>Ocimum gratissimum</i>	Lamiaceae	Ram tulsi
10	<i>Costus speciosus</i>	Costaceae	Leipirik
11	<i>Tinospora cordifolia</i>	Menispermaceae	Ningthokorow (Giloy)
12	<i>Piper nigrum</i>	Piperaceae	Gulmorich
13	<i>Zingiber officinale</i>	Zingiberaceae	Ada (Ginger)
14	<i>Boswellia serrata</i>	Burseraceae	Dhup
15	<i>Oryza sativa</i>	Poaceae	Chowl (Rice)

2. Materials and Methods

The study was done by interviewing the elderly person of village Tilakpur, located in Unakoti district, Tripura who are knowledgeable in ethno-medicine and have been making this concoction for years and consuming them over decades. The preparation protocols of the concoction were noted down and photographic record was taken for used herbs and shrubs for identification purpose during the course of field study.

2.1 About Bishnupriya Manipuris

Literature explicitly revealed that a very little information is available about the Bishnupriya Manipuris and considered a small community which is a native of Manipur. They left state after they lost themselves to the rivalry clan of Meiteis. After the defeat they took shelter in nearby areas namely parts of Assam, Tripura and parts of Bangladesh. In Tripura, the community inhabits parts of North Tripura, Unakoti district, Kamalpur, parts of Dhalai district etc. The traditional healers of Bishnupriya community are called 'Meipas' and those who follow community based folk medicine are called 'Ojhas'. The temple priests of this community are also called Ojhas. In the earlier times, Meipas and Ojhas played a very important role in the treatment of various ailments and diseases. But with increasing westernisation and the penetration of modern pharmaceutical medicines, the role of these Maipas and Ojhas has declined drastically.^[6] Today the ethno-medicinal knowledge is restricted to a few. Generally, the knowledge is passed on to the next generation verbally and there is no written record of it up to date. Despite this decline, the rural people of Tripura and many Bishnupriya Manipuris rely on the trusted ethno-medicinal knowledge of Meipas and Ojhas for commonly occurring diseases like common cold, sore throat etc.

3. Results

The present study is a first of its kind related to this exact herbal concoction used by the Bishnupriya Manipuri community in Tripura. This concoction is a mixture of several kinds of herbs which is used for the treatment of common cold, sore throat, runny nose, cough and fever. 15 plant species belonging to 12 families have been used in the preparation of this (Table 1). This same concoction has been seen consumed during the corona pandemic for common corona-like

symptoms such as fever, sore throat, cough and body ache. Significant relief has been seen by the people who have consumed it. The people claim that the effectiveness of the concoction is best seen when it is consumed on a daily basis. They also claim that the severity of the symptoms reduced to some extent with constant consumption of Khulleigulli (Figure- 1) during the course of the diseases. The people took 4 khulleigulli tablets twice a day with luke warm water. The tablet has to be chewed well before engulfing.

3.1 Preparation

1. Pluck 2-3 shoots of singarei (Figure-6), 4-5 leaves of phakpoi, take ginger about the size of your thumb, 5-6 black pepper, add about a teaspoon of rice, 4-5 sirisokusum leaves, add 2-3 giloy bark or add 3-4 leaves of it, add 2 leaves of basokpata (Figure-5), 2-3 roots of bekuri, 4-5 leaves of Ram tulsi (Figure-4), 3-4 leaves of kalatulsi and 3-4 leaves of Dolatulsi (Figure-2), add 1 tablespoon of Dhup, 2-3 Leipirik grass (Figure-3), 2-3 Jaiphal
2. Grind all of this in a Pestle mortar and make a paste of it in such a consistency that it is neither too runny nor too thick.
3. Add a tablespoon of gopichandan to the paste.
4. Make small round tablets using the palm of hand.
5. Dry them in sunlight for 3-4 days until it becomes dry completely.
6. Store them in air tight containers and keep in a cool place.

4. Discussion

Findings of the present work revealed that the benefit of ethno medicinal utilization of herbal concoction 'Khulleigulli' and its probable treatment for upper airway symptoms of COVID19. Giloy, used in this preparation is a medicinal plant native to India and is widely used in formulations for treatment of various diseases.^[7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17] Several study revealed that many plant parts or their phyto-compounds have potent inhibitor against SARS-CoV-2.^[18, 19, 20, 21, 22, 23] Further, molecular docking study also supports the potentiality of plant compound against COVID-19.^[24, 25, 26, 27]

This herbal mixture is commonly used by the Bishnupriya Manipuri community and this exact concoction is endemic to



Figure-1. Khulleigulli (final product)



Figure-2. *Ocimum sanctum*



Figure-3. *Costus speciosus* (Leipirik)



Figure-4. *Ocimum gratissimum* (Ram Tulsi)



Figure-5. *Adhatoda justice*



Figure-6. *Nyctanthes arbor-tritis*

this community. This mixture is used for the treatment of commonly occurring symptoms such as sore throat, runny nose, fever etc. which is similar to the upper airway symptoms of coronavirus. It has been claimed by the locals that use of Khulleigulli has significantly reduced the severity of the upper respiratory airway symptoms of coronavirus. Instead of depending on the modern pharmaceutical medicines that have higher risk of side effects, the locals have been relying on Khulleigulli as their primary treatment. With regular use it helps prevention of seasonal flu and improves the immunity.

5. Conclusion

The above findings can conclude that the people belonging to Bishnupriya Manipuri community have a rich ethnobotanical knowledge and resources. They knew the utilization of local herbs for various ailments. Ayurveda is world's oldest medical system that can manage all diseases without any possible side effects. The knowledge of Khulleigulli preparation is not known to any other community and hence this needs global recognition. There is no documentation about this mixture and no research has been done on this. The knowledge of the preparation of it is done verbally from generation to generation. Also, not much of today's young generation is interested in the ethno medicinal knowledge of their Meipas because of the influence of westernisation.

Acknowledgement

The authors are thankful to the college authority of Ramkrishna Mahavidyalaya, Kailashahar, and Tripura for providing research facility and encouragement. The authors is also thankful to the local people of Unakoti and the elderly people of the Bishnupriya Manipuri community for their help in understanding the preparation and identification of various

herbs used in the study. The authors are very much thankful to the knowledgeable people of the community like Srimati Ranjabati Sinha (72Y/F) for her immense help in demonstrating the preparation of the Khulleigulli.

Conflicting Interests

The authors have declared that no conflicting interests exist.

References

- [1] Rai, P. K., & Lalramnghinglova, H. (2011). Ethnomedicinal plants of India with special reference to an Indo-Burma hotspot region: An overview. *Ethnobotany Research and Applications*, 9, 379-420.
- [2] Choudhury, P. R., Choudhury, M. D., Ningthoujam, S. S., Das, D., Nath, D., & Talukdar, A. D. (2015). Ethnomedicinal plants used by traditional healers of North Tripura district, Tripura, North East India. *Journal of Ethnopharmacology*, 166, 135-148.
- [3] Lokho, A. (2012). The folk medicinal plants of the Mao Naga in Manipur, North East India. *International Journal of Scientific and Research Publications*, 2(6), 1-8.
- [4] Laloo, D., & Hemalatha, S. (2011). Ethnomedicinal plants used for diarrhea by tribals of Meghalaya, Northeast India. *Pharmacognosy reviews*, 5(10), 147.
- [5] Singha, A. K. (2002). *Bishnupriya Manipuri: A Brief Introduction*. Language in India. Vol.2
- [6] Satyanath, S., & Laskar, N. B. (2009). Ethnicity, bilingualism, and variable clitic marking in Bishnupriya Manipuri. *Variation in Indigenous Minority Languages*, 25, 441.
- [7] Kizhakkayil, J., & Sasikumar, B. (2011). Diversity, characterization and utilization of ginger: a review. *Plant Genetic Resources*, 9(3), 464-477.

- [8] Agrawal, J., & Pal, A. (2013). *Nyctanthes arbor-tristis* Linn—A critical ethnopharmacological review. *Journal of ethnopharmacology*, 146(3), 645-658.
- [9] Gangwar, A. K., & Ghosh, A. K. (2014). Medicinal uses and pharmacological activity of *Adhatodavasica*. *International Journal of Herbal Medicine*, 2(1), 88-91.
- [10] Zhou, X., Yuping, Z., Zhao, H., Liang, J., Zhang, Y., & Shi, S. (2015). Antioxidant homoisoflavonoids from *Polygonatum odoratum*. *Food chemistry*, 186, 63-68.
- [11] Hossain, M. T., & Hoq, M. O. (2016). Therapeutic use of *Adhatodavasica*. *Asian Journal of Medical and Biological Research*, 2(2), 156-163.
- [12] Joshi, R. K. (2017). Phytoconstituents, traditional, medicinal and bioactive uses of *Tulsi* (*Ocimum sanctum* Linn.): a review. *Journal of Pharmacognosy and Phytochemistry*, 6(2), 261-4.
- [13] Okonogi, S., Kheawfu, K., Holzer, W., Unger, F. M., Viernstein, H., & Mueller, M. (2016). Anti-inflammatory effects of compounds from *Polygonum odoratum*. *Natural product communications*, 11(11), 1934578X1601101107.
- [14] Claeson, U. P., Malmfors, T., Wikman, G., & Bruhn, J. G. (2000). *Adhatodavasica*: a critical review of ethnopharmacological and toxicological data. *Journal of ethnopharmacology*, 72(1-2), 1-20.
- [15] Devi, G. (2020). MEDICINAL PLANT: GILOY. *International Journal of Current Research*, 12(8), 12940-12941.
- [16] Gheware, A., Dholakia, D., Kannan, S., Panda, L., Rani, R., Pattnaik, B. R., ...& Prasher, B. (2021). *Adhatoda Vasica* attenuates inflammatory and hypoxic responses in preclinical mouse models: potential for repurposing in COVID-19-like conditions. *Respiratory research*, 22(1), 1-15.
- [17] Shree, P., Mishra, P., Selvaraj, C., Singh, S. K., Chaube, R., Garg, N., & Tripathi, Y. B. (2022). Targeting COVID-19 (SARS-CoV-2) main protease through active phytochemicals of ayurvedic medicinal plants—*Withania somnifera* (Ashwagandha), *Tinospora cordifolia* (Giloy) and *Ocimum sanctum* (Tulsi)—a molecular docking study. *Journal of Biomolecular Structure and Dynamics*, 40(1), 190-203.
- [18] Tiwari Pandey, A., Pandey, I., Zamboni, P., Gemmati, D., Kanase, A., Singh, A. V., & Singh, M. P. (2020). Traditional herbal remedies with a multifunctional therapeutic approach as an implication in COVID-19 associated co-infections. *Coatings*, 10(8), 761.
- [19] Khanal, H., Khanal, U., & Koirala, J. (2020). Medicinal plant *vasaka* could be a therapeutic option for the management of COVID-19 symptoms. *Journal of Medicinal Plants*, 8(5), 44-48.
- [20] Goothy, S. S. K., Goothy, S., Choudhary, A., Potey, G. G., Chakraborty, H., Kumar, A. H., & Mahadik, V. K. (2020). Ayurveda's holistic lifestyle approach for the management of coronavirus disease (COVID-19): possible role of tulsi. *Int. J. Res. Pharm. Sci.*, 16-18.
- [21] Magzoub, M. (2020). Life Style Guideline of *Ginger* (*Zingiber officinale*) as Prophylaxis and Treatment for Coronaviruses (SARS-CoV-2) Infection (COVID-19). *Saudi Journal of Biomedical Research*, 5(6), 125-127.
- [22] Srivastava, A. K., Chaurasia, J. P., Khan, R., Dhand, C., & Verma, S. (2020). Role of medicinal plants of traditional use in recuperating devastating COVID-19 situation. *Med Aromat Plants (Los Angeles)*, 9(359), 2167-0412.
- [23] Roy, A., & Menon, T. (2021). Evaluation of bioactive compounds from *Boswelliaserrata* against SARS-CoV-2. *Vegetos*, 1-11.
- [24] Murugesan, S., Kottekad, S., Crasta, I., Sreevathsan, S., Usharani, D., Perumal, M. K., & Mudliar, S. N. (2021). Targeting COVID-19 (SARS-CoV-2) main protease through active phytochemicals of ayurvedic medicinal plants—*Emblicaofficinalis* (Amla), *Phyllanthus niruri* Linn. (Bhumi Amla) and *Tinospora cordifolia* (Giloy)—A molecular docking and simulation study. *Computers in Biology and Medicine*, 136, 104683.
- [25] Chowdhury, P. (2021). In silico investigation of phytoconstituents from Indian medicinal herb '*Tinospora cordifolia* (giloy)' against SARS-CoV-2 (COVID-19) by molecular dynamics approach. *Journal of Biomolecular Structure and Dynamics*, 39(17), 6792-6809.
- [26] Poojari, S., Porika, R., & Mamidala, E. (2014). Phytochemical analysis and in vitro antidiabetic activities of *Physalis angulata* fruit extracts. *Natl. J. Integr. Res. Med*, 5, 34-38.
- [27] Prasad, P., & Estari, M. (2014). Phytochemical and chromatographic studies in the leaves extract of *Acalypha indica*. *Online International Interdisciplinary Research Journal*, 4(1), 175-182.